

The safety of the patient lies in complete extirpation of the tumor. It may be necessary in some cases to resect both artery and vein. In others ligation is resorted to for hemorrhage. Where the tumor involves Hunter's canal the safest procedure is amputation. In more favorably-situated tumors the vessel may be exposed above and below the growth, ligatures passed so that should the vessel be wounded during resection ligation may proceed immediately. In all cases it is well to prepare the mind of the patient for a possible amputation.

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OLLIER ON SIMPLIFICATION OF THE POST-OPERATIVE TREATMENT OF RESECTION OF THE KNEE.<sup>1</sup>

Professor Ollier's contribution with the above title contains scarcely anything really new to surgeons familiar with the use of iodoform dressings and with sublimatic dressings, and also with the management of plaster of Paris splints; and, considering the number of times the first person (usually plural) is used, it is perhaps to be regretted that the names of other surgeons never appear in the memoir except as a preliminary to the demonstration of, in one case, an encroachment upon Professor Ollier's claims of priority, and in the other, a confession by Lucas-Championière of his unwillingness to leave carbolized gauze dressings unchanged for more than a few days after excision of the knee. M. Ollier has, however, this excuse that so much has been done by so many other surgeons in every country of late years in the direction of simplifying dressings for excisions and other operations, that finding it impossible to make full acknowledgment to all, he may be right in doing justice only to himself.

"To thine ownself be true,

Thou canst not then be false to any man"

may be a precept applicable here, but it is a dangerous doctrine, and M. Ollier does not like it when followed by an English surgeon who contrived a method already published by himself.

Taken as a whole, however, M. Ollier's paper is one of great value;

<sup>1</sup>Memoir by Prof. Ollier in *Revue de Chirurgie* for August, 1887.

force and clearness. Nowhere could the surgeon find a series of rules for the execution and management of excision of the knee, which he could more safely obey and feel that he was doing in every or almost every respect the very best thing possible for his patient. Professor Ollier always does justice to his subject, and impresses one with the correctness and keenness of his judgment no less than with his ingenuity and inventiveness. From these preliminary observations we will pass to an analysis of the paper.

The difficulty of the post-operative treatment of excision of the knee is the cause of the immense variety of apparatus which have been contrived for the purpose by various surgeons. It has also in Ollier's opinion been one of the causes which have prevented the operation from taking its proper position in practical surgery. If this difficulty is shirked, great is the risk of failure of osseous union or of ultimate displacement of the bones, not to mention more serious dangers.

With antisepsis the question is simplified at once ; the mortality once enormous, is now lowered, in non-complicated cases, almost to the vanishing point ; but the orthopaedic and functional results are not correspondingly improved. In fact, if the changes of dressings are frequent, these results may become worse.

Persuaded that the best way to ensure osseous union is to secure absolute immobility during all the time necessary to complete the process, Ollier sought for and found a dressing which would last forty or fifty days. This, he says, reduces the post-operative treatment of knee excision to extreme simplicity.

Before describing it, he recalls the chief points of his mode of operating (published in the *Revue de Chirurgie* in 1882). They consist, essentially, of the preservation of the lateral ligaments and of all the healthy parts of the periosteal-capsular sheath, *i. e.*, of all the tissues fitted to keep the bones in place and to accumulate around the line of union as many ossifiable elements as possible. This mode of proceeding is perfectly compatible with the removal and destruction of all the tuberculous elements in any case really suitable for excision. And by following it one can reckon on preventing those progressive

flexions and other secondary disorders which otherwise are apt to follow excision of the knee.

A.—*Mode of dressing intended to maintain permanent asepsis of the wound. Drainage through special latero-posterior incisions. Iodoform spread abundantly outside the wound. Value of osseous suture. Simplified appliances.*

Asepsis is the first essential. One case is mentioned in which the first dressing was left *in situ* for 52 days. The appearances are minutely described. They do not differ from those familiar to surgeons who leave their first dressings on osteotomies, for example, for two or three weeks. But it is worth noticing that the components of the dressing which had been soaked with blood or serosity were still moist on the posterior aspect of the limb, even as high up as the root of the thigh. This dampness must have been due to the fact that Mackintosh was used, and was probably not a desirable condition. But all's well that ends well. There was perfect union of the bone.

What are the conditions necessary to obtain such results? The two most important are: (1). The removal of all the infected tissues and parts calculated to cause infection. (2). The drainage of all dependent parts and of all cul-de-sacs in which infectious matters could accumulate.

"For this purpose we remove, in cases of fungous arthritis, all the diseased synovial membrane; we dissect out with care the sub-tricipital cul-de-sac and the lateral diverticula which may occur, and at the situations where a fibrous capsule or ligaments exist, we scrape away such fungosities as cover their internal surface; but we preserve the healthy part of the periosteal-capsular covering. As we always try to get osseous union (except in quite exceptional cases), we excise totally, and, when the tibia is almost healthy, we remove a thin slice of it to abolish the articular cartilage. As to the patella, as a rule, we remove it, and in exceptional cases when we have left it, we have, by a vertical cut of the saw, removed all its cartilaginous surface in order to have, not a sliding bone, but an adhesive surface."

Ollier's incisions form a quadrilateral flap with the base upwards and

the transverse cut at the lower end, passing over and dividing the ligamentum patellae. The two lateral ones can be prolonged downwards, if necessary, so as to form the letter H. Thus can be preserved the lateral ligaments, which Ollier avers used to be divided by all surgeons until he adopted the opposite practice. He claims for them great value as elements in the preservation of the solidity of the synostosis. The incisions for drainage are two, and correspond to the posterior borders of the condyles.

In a foot note, Professor Ollier writes: "We reserve our vertical and median transpatellar incision for exceptional cases and in particular for traumatisms," and he points out that one of the authors of the "*Revues de Journaux*" does not appear to have suspected that he, M. Ollier, had described it five years ago. Now, it is perfectly true that M. Ollier did write a full and clear description of such an operation in the *Revue de Chirurgie*; but the description is so worded as to convey the idea that it had been entirely worked out on the dead subject and, if M. Ollier has ever published any operations of the kind on living patients, there is much reason to think they have escaped observation in this country. Accordingly, Mr. Herbert Allingham deserves some credit for having reinvented Ollier's vertical operation last year; and perhaps I have a right to claim a little for having actually done the operation on a living boy in the same year that M. Ollier first wrote of it. My operation was a few months subsequent to Ollier's article, but I certainly did not get the idea from him or his article. My case was the first knee free from *infectious* disease which I ever excised; and I dealt with it simply according to the first principles of surgery, one of which is that, in operating on the limbs, a longitudinal incision is almost always preferable to a transverse one.

However, I agree with Ollier and differ from Allingham in thinking that the median longitudinal incision is not suited for tuberculous knees, and I shall call the "vertical and median transpatellar incision" "Ollier's," for convenience sake, and because the great French surgeon's contributions to our art deserve every compliment that can be paid to him.

Ollier's incisions permit a mere operation of erosion to be performed

should the comparatively healthy state of the cartilages and bones prove that alone to be necessary. After the operation the ligamentum patellae is sutured.

When there exist posteriorly masses of pulpy material in accidental pouches or in the bursa "of the internal gastrocnemius," a drain is inserted opening directly backwards. As a rule the postero-lateral drains make the former unnecessary. To prevent compression of the drain by the bones, the latter may be gouged to form a channel. The lateral drains have a calibre of 7 millimetres. The "tricipital" bursa should always be drained, except in the rare cases wherein it has become obliterated.

Ollier always inserts sutures into the bones and has long given up the use of nails. Of the latter he says that they are more rapidly and easily applied than the former, but that the friability of the osseous substance in certain forms of "fungous" osteitis prevents firm fixation by nails. With regard to material for the suture he says that plated iron wire is as good as any other. He takes care to include the periosteum and the fibrous layers which cover it within the suture.

According to the amount of friability of the bones, the wire is inserted 20 or 15 millimetres from the surface of the section. The wires are inserted laterally and a little anteriorly and fastened by twisting exactly four times on themselves. The exact number of turns must be remembered with a view to untwisting. When a great deal of bone has been resected, a couple of centimetres may be cut off the end of the large anterior flap of soft tissues.

Iodoform is dusted freely over the parts which are then wrapped in carbolic gauze, among the layers of which are scattered coarsely powdered or crystallized iodoform. The gauze is iodoformed with especial care near the root of the thigh, because the limb being placed with the foot high, the discharge gravitates towards the buttock.

Over all are placed a "complete" carbolized gauze dressing with Mackintosh or gutta-percha tissue.

The apparatus of fixation is a "demi-gouttiere" of muslin soaked in wet plaster-of-Paris, which extends along the posterior aspect of the limb from the toes to the groin. A sheet of unsized paper is inter-

posed between the plaster splint and the dressings and prevents them from adhering together.

*B.—Cases favorable to consolidation under a single dressing—Examples—Circumstances which necessitate removal of the dressing.*

The most favorable cases are those in which excision is performed before the appearance of fistulae and infection of the articular cavity. Orthopædic resections are the most favorable of all.

Ollier considers iodoform the most certain and the most lasting antiseptic we possess, and that it secures best the permanent antisepsis needed. He therefore attaches the greatest importance to its employment.

By means of "immovable occlusion" with thick layers of cotton wool (of which the most internal were soaked in carbolic oil), supported by a silicated apparatus, he had already left under the same dressing, for thirty or forty days, compound fractures of the thigh and amputation stumps, but he had never succeeded with this plan in the case of excision of the knee.

With regard to the leaving the drainage tubes *in situ* for six weeks or more, Ollier does not trouble himself about them so long as the patient remains well and free from pain.

Even if a little pus should form, it is of no consequence provided there is free egress for it from the wound.

When the dressings are removed the union of the bone is not yet ossified, (a long time yet is required for that to take place, at least in some cases), but they form a continuous whole which permits the limb to be raised by the heel or by the toes. The cicatrization of the drainage tube holes is only an affair of a few days.

Ollier then contrasts his practice with that of surgeons who carry out to the letter "Lister's dressing," and takes M. Lucas-Championnière as a type. The latter writes that all his attempts to manage with very infrequent dressings have, except in the case of ovariotomies, hernias and small operations, led to very inferior union to that which he obtained by more or less changes of dressings.

Ollier is one of those who think that iodoform has changed all this.

Pedantic obstinacy is to be avoided. There are cases in which pain or rise of temperature demand a redressing on even the third or fourth day.

Elevation of temperature alone is not sufficient to require a new dressing, if there is no suffering and confesses distinctly to feeling all right. In one case in which a temperature of  $39.6^{\circ}$  was attained, the dressing was not changed till the seventeenth day. It is my duty to point out that M. Ollier advances no proof, except such as may be inferred from this very insufficient case, of the wisdom of the course he advocates. Does he really wish us to believe that a single change of dressing is likely to be so mischievous that it had better be avoided even when the temperature rises to  $103.3^{\circ}$  F. ( $39.6$  cent.)?

In the case quoted, the temperature fell the next day to  $101.5^{\circ}$ . This was something to justify postponement of dressing; but as the temperature danced up and down for several days more, some people may accuse M. Ollier of having himself gone dangerously near to the "systematic" or red-tape practice against which he warns us.

Two cases are reported as examples. Their headings are as follows, respectively:

**CASE I.**—Tuberculous arthritis of the knee; many fistulae penetrating into the joint.—Total resection of the knee.—First redressing on the fifty-third day.—Union of the femur and tibia already firm.

**CASE II.**—"Fungous" arthritis of the knee; fistulae in the patellar tendon; sub-tricipital focus of granulations and pus.—Resection of the knee; multiple drains.—First dressing on the seventeenth day.—Femoro-tibial consolidation already advanced. Second dressing on the thirty-third day.—The patient went out four days afterward with a silicated bandage.

In the second case a curious circumstance was noticed, namely the formation of a new patella in the periosteal sheath which had been preserved. The new patella was obviously as broad as the old, but not so thick. It was somewhat movable on the femur.

Infrequency of dressings economizes the sufferings of the patient and the time of the surgeon, and this latter argument is not without importance when we consider how long and minute is the task of dressing a resection of the knee.

M. Ollier thus formulates his conclusions.

1. Infrequent dressings are perfectly applicable to resection of the knee.
2. By employing iodoform, one can postpone the first change of dressings as long as forty, fifty or even more days.
3. Firm union of the knee can thus be obtained under one dressing.
4. This mode of proceeding introduces great simplicity into the after-treatment of resection of the knee.

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